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Touched by technology: automated tactile stimulation in the treatment of apnoea of prematurity

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TOUCHED BY TECHNOLOGY

Automated tactile stimulation in the treatment of apnoea of prematurity

1. Although manually applied tactile stimulation is the primary and most widely recommended intervention for apnoea in preterm infants, the techniques and sites of application vary considerably among caregivers • • *This thesis*
2. Caregivers often refrain from intervening in cardiorespiratory events, especially when these events are of short duration • • *This thesis*
3. Combining automated tactile stimulation with a yet to be developed predictive algorithm holds significant potential to improve neonatal respiratory care. This thesis
4. Rather than repurposing existing mechanical stimulation devices, design-driven research can inform the design and development of a purpose-built system tailored to its intended context • • *This thesis*
5. Providing direct automated tactile stimulation in response to cardiorespiratory events using a purpose-built system, is feasible, well-tolerated by preterm infants and accepted by the nurses • • *This thesis*
6. Although clinical teams frequently adjust the support to match the infant's needs, their workload limits time availability and makes continuous tailoring of the support to the infant's needs difficult • • *Claure, N. & Bancalari, E. (2013) Role of automation in neonatal respiratory support. J Perinat Med, 41(1):115–118.*
7. Despite the existence of interventions for apnea of prematurity, there remains strong endorsement by neonatologists for developing new approaches to stabilize breathing patterns and to prevent intermittent hypoxia and bradycardia episodes in preterm infants • • *Williamson, J.R., Bliss, D.W. & Paydarfar D. (2013) Forecasting respiratory collapse: theory and practice for averting life-threatening infant apneas. Respir Physiol Neurobiol, 189(2):223-231.*
8. The use of new technologies is a perfect way not only to reduce work pressure, but also to offer the most balanced, effective treatment to newborns within very narrow therapeutic margins • • *Te Pas, A.B. (2019, February 11) The Equilibrist. Inaugural lecture, Leiden University.*
9. The more advanced a control system is, so the more crucial may be the contribution of the human operator • • *Bainbridge, L. (1983) Ironies of automation. Automatica, 19(6):775-779.*
10. When caregivers paste instructions on a medical device ...it is badly designed • • *Donald A. Norman (2013). (Modified)*
11. There is no better designer than nature • • *Alexander McQueen.*
Despite all technological advancements we've made, the human body remains one of the most amazing designs around.
12. The things that make me different are the things that make me • • *Piglet, Winnie the Pooh.*
Our differences are strengths we should embrace and appreciate, because by being unique, we bring new ideas, learn from each other, and achieve so much more.